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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/837,897

04/18/2001

Stephen Allott

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05/05/2004

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EXAMINER

GLENN, KIMBERLY E

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Applicati n N .</b>	<b>Applicant(s)</b>	
	09/837,897	ALLOTT, STEPHEN	
	<b>Examin r</b>	<b>Art Unit</b>	
	Kimberly E Glenn	2817	<i>AW</i>

**-- The MAILING DATE of this communication appears on th cover she t with th c rresp ndence address --**

### Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 23-31 and 33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant recites in claims the limitation of a loop filter coupled to the output of the charge pump. Examiner cannot find support for the loop filter in the specification, drawing or original claims. With regards to claims 27-31, applicant recites in claim 27 the limitation receiving the output signal from the loop filter with a second filter. Examiner cannot find support for this limitation in the specification, drawing or original claims. With regards to claims 29-31, applicant recites in claims 29 the limitation the frequency characteristic of the second filter being the cutoff frequency of the second filter. Examiner cannot find support for this limitation in the specification, drawing or original claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Applicant discloses a control voltage used to tune a filter in claim 24. Which control voltage is applicant referring to the control voltage disclosed in claims 21 or the control voltage disclosed in claims 23?

Applicant discloses a filter in claim 24. Which filter is applicant referring to the filter disclosed in claims 18 or the loop filter disclosed in claims 23?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nauta US Patent 5,117,205 in view of Brahmbhatt US Patent 4,442,481 (of record).

Nauta discloses a voltage controlled oscillator 7 comprising; a first gm cell G1; a second gm cell G2 having a noninverting input coupled to a noninverting output of the first gm cell, an inverting input coupled to an inverting output of the first gm cell, a noninverting output coupled to an inverting input of the first gm cell, and an inverting output coupled to a noninverting input of the first gm cell; a first capacitance C1 coupled between the noninverting output and inverting output of the first gm cell; a second capacitance C2 coupled between the noninverting output and inverting output of the second gm cell; and a filter 1 comprising a third gm cell, wherein the first, second and third gm cell G3-G9 each comprises a variable resistance. The variable resistance comprises a plurality of MOS devices coupled in series. The gate of the MOS device is

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configured to receive a control voltage ( $V_{i+}$   $V_{i-}$ ). In argument, applicant argues that MOS transistors are variable resistances. (Figure 1-3 and 5b and column 7, line 40 through column 9, line 47 and column 13, lines 21-47)

Thus, Nauta is shown to teach all the limitation of the claim with the exceptions of the variable resistance comprising a native MOS device

Brahmbhatt teaches that native MOSFETS are art-recognized equivalent to enhancement mode MOSFETS but have a very low threshold voltage that additionally does not require additional doping; therefore, unwanted manufacturing variations are reduced (see col. 9, lines 1 - 20).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the art-recognized equivalent native MOSFETS as taught by Brahmbhatt in place of the generic MOSFETS in the transconductance cell of Nauta figure 2 because such a modification would have been considered a mere substitution of art-recognized equivalent MOSFETS that would have advantageously not required additional doping in an integrated structure.

In light of the 35 USC 112 rejection above, claims 22-26 and 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nauta US Patent 5,117,205 in view of Brahmbhatt US Patent 4,442,481 (of record) in view of Chen US Patent 5,463,352.

Nauta in combination with Brahmbhatt discloses a voltage controlled oscillator comprising; a first gm cell; a second gm cell having a noninverting input coupled to a noninverting output of the first gm cell, an inverting input coupled to an inverting output

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of the first gm cell, a noninverting output coupled to an inverting input of the first gm cell, and an inverting output coupled to a noninverting input of the first gm cell; a first capacitance coupled between the noninverting output and inverting output of the first gm cell; a second capacitance coupled between the noninverting output and inverting output of the second gm cell; and a filter comprising a third gm cell, wherein the first, second and third gm cell each comprises a variable resistance, the variable resistance comprises native MOS devices. The variable resistance comprises a plurality of native MOS devices coupled in series. The gate of the native MOS device is configured to receive a control voltage. Nauta further teaches a phase locked loop connected to the voltage-controlled oscillator.

Nauta and Brahmbhatt are shown to teach all the limitations of the claim with the exception of the phase locked loop comprising of a reference signal, a phase/ frequency detector, a charge pump, and a loop filter.

Chen discloses in figure 1 a typical phase locked loop comprising of a reference signal, a phase/ frequency detector, a charge pump, and a loop filter.

Therefore, it would have been obvious to substitute the are recognized equivalent phase locked loop shown in Chen in place of the generic phase locked loop disclosed in figure 2 of Nauta because such a modification would have been considered a mere substitution of art-recognized equivalent phase locked loops.

### ***Response to Arguments***

Applicant's arguments with respect to claims 18-37 have been considered but are moot in view of the new ground(s) of rejection.

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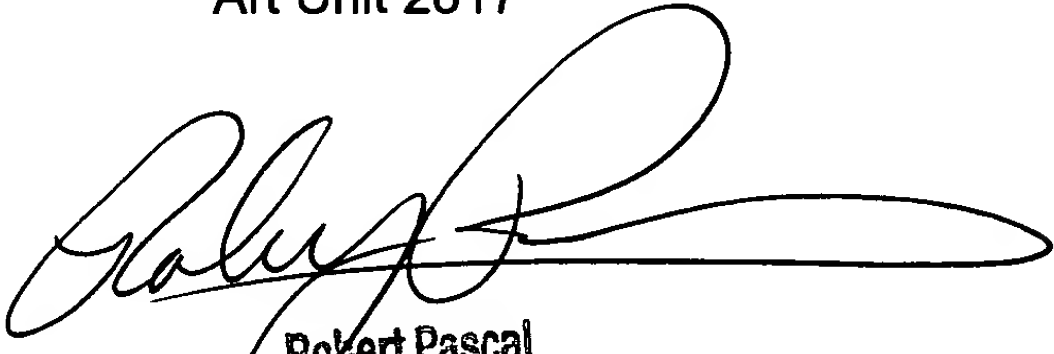
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn  
Examiner  
Art Unit 2817

keg



Robert Pascal  
Supervisory Patent Examiner  
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